

FORM PTO-1390 (Modified)
(REV 11-98)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

506-076

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR

10/009438

INTERNATIONAL APPLICATION NO.
PCT/GB00/02238INTERNATIONAL FILING DATE
8 June 2000PRIORITY DATE CLAIMED
9 June 1999

TITLE OF INVENTION

IMMUNITY GENERATION

APPLICANT(S) FOR DO/EO/US

CHRISTOPHER JEREMY LEONARD

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
 - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ A copy of the International Search Report (PCT/ISA/210).
8. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
9. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
10. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
11. ☐ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).

Items 13 to 20 below concern document(s) or information included:

13. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
14. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. ☐ A **FIRST** preliminary amendment.
16. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. ☐ A substitute specification.
18. ☐ A change of power of attorney and/or address letter.
19. ☒ Certificate of Mailing by Express Mail
20. ☐ Other items or information:

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR 1.101) 10/009438		INTERNATIONAL APPLICATION NO. PCT/GB00/02238		ATTORNEY'S DOCKET NUMBER 506-076	
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21. The following fees are submitted:				CALCULATIONS PTO USE ONLY	
BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) : <input checked="" type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2) paid to USPTO and International Search Report not prepared by the EPO or JPO \$1,000.00 <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$860.00 <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$710.00 <input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$690.00 <input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00 <p style="text-align: center;">ENTER APPROPRIATE BASIC FEE AMOUNT =</p>				\$1,000.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than months from the earliest claimed priority date (37 CFR 1.492 (e)). <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30				\$130.00	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	12 - 20 =	0	x \$18.00	\$0.00	
Independent claims	4 - 3 =	1	x \$84.00	\$84.00	
Multiple Dependent Claims (check if applicable). <input type="checkbox"/>				\$0.00	
TOTAL OF ABOVE CALCULATIONS =				\$1,214.00	
Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28) (check if applicable). <input checked="" type="checkbox"/>				\$607.00	
SUBTOTAL =				\$607.00	
Processing fee of \$130.00 for furnishing the English translation later than months from the earliest claimed priority date (37 CFR 1.492 (f)). <input type="checkbox"/> 20 <input type="checkbox"/> 30 +				\$0.00	
TOTAL NATIONAL FEE =				\$607.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable). <input type="checkbox"/>				\$0.00	
TOTAL FEES ENCLOSED =				\$607.00	
				Amount to be refunded	\$
				charged	\$

☒ A check in the amount of **\$607.00** to cover the above fees is enclosed.

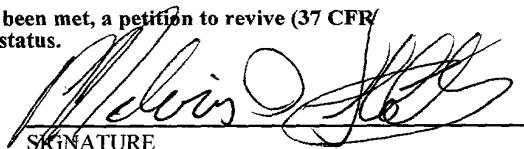
☐ Please charge my Deposit Account No. _____ in the amount of _____ to cover the above fees.
A duplicate copy of this sheet is enclosed.

☒ The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. **19-4512** A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

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 Milford, CT 06460
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 SIGNATURE
 Melvin I. Stoltz
 NAME
 25,934
 REGISTRATION NUMBER
 December 6, 2001
 DATE

IMMUNITY GENERATION

Field of the Invention

This invention relates to immunity generation. The invention also relates to the treatment and/or prevention of allergies.

The invention also relates to the use of insects, including larval forms and other life forms, in the recycling of biological waste.

The invention further relates to the use of insects and their larvae as a food source.

Summary of the Invention

According to a first aspect of the present invention there is provided a method for the manufacture of a medicament for immunity generation and/or treatment and/or prevention of allergies, which method includes the use of insect tissues and/or larval forms and derivatives of insects.

According to a second aspect of the present invention there is provided a medicament for the provision of immunity to bacterial

and viral disease and/or allergies and/or tumours, said medicament comprising insect tissues and/or larval forms and derivatives of insects.

The medicament may be in a form which permits its ingestion, digestion and assimilation to provide immunity to bacterial and viral disease and/or allergies and/or tumours. The medicament may alternatively be in a form which permits its injection into the subject to which or whom the immunity is to be given. As a further alternative, the medicament may be in a form which permits its absorption transcutaneously.

The medicament may alternatively be in a form which is suitable for ingestion, digestion and assimilation by a nursing mother for provision of immunity to a baby being breast-fed.

The subject may be bird or an animal, including humans.

According to a third aspect of the present invention there is provided a method of recycling biological waste which includes the use of insects, including larval and other life forms, to produce either a medicament having immunity-generating properties or a food source which has immunity-generating properties.

The biological waste may be sewage, paper, vegetable and organic materials. Typical waste materials include animal offal and residue from the meat processing industry. They also include deceased diseased animals, such as those infected with BSE.

According to a fourth aspect of the present invention there is provided a method of producing a food source which includes the use of insects and their larvae which act as carriers providing immunity generation as well as protein, energy and biologically active beneficial compounds.

Such beneficial compounds include vitamins, omega 3 unsaturated fatty acids, trace elements, minerals and amino-acids, such as methionine, lysine, isoleucine and phenylalanine.

Description of the Preferred Embodiments

Certain species of insects and their larvae have adapted by evolution to become biological recyclers. In this role they have developed an ability to metabolise faecal matter, dead, decaying and diseased animal remains. This has necessitated an ability on their part to withstand bacterial and viral attack from the food on which they feed, and in this way they have developed a successful immune strategy.

For the success of the animal kingdom as a whole, it is imperative that disease should not become rampant and be spread from the ingestion of the animals which feed on them.

The ingestion and digestion of insects by higher animals of the food chain provide a pathway for the transfer of immunity up the food chain.

In the move towards a more concerned approach to our environment, we need to work more closely in tandem with it. This requires a greater understanding of the way of the natural world.

In our husbandry of animals for food, we must, as far as is possible, return to a feeding regime that is more like the original regime from which the animals have developed.

It has been observed that, in the nutrition of the human species, the feeding of simple food substitutes in the form of concentrates, although providing all the basic nutritional requirements, has led to problems in the digestive tract, and a diminution of the health of the individual as exhibited by, for example, the growth in numbers of alimentary tract cancers.

What the human animal requires is good wholesome food. To ensure this, we must examine and promote the well-being of the animals on which we feed.

In the natural environment the circuit of life succeeds and we must understand and promote this relationship. In the control of disease in man, we have ventured along the path of specific anti-bacterial, anti-viral drug protection. In contrast, the present invention is concerned with the development of an immune system that is initiated by charging it by the ingestion of foods in which immunity has been created naturally.

METHOD AND PROCEDURE

The insects to be used are grown on a substrate inoculated with the relevant bacteria or virus when pursuing specific immunological responses. Relevant substrates would be used when biologically recycling, for example, sewage.

The insects to be used, if grown on a substrate of mixed bacteria, will provide a general raised level of anti-bacterial activity, providing general immunity to the recipient consumer. In the incidence of requiring specific immuno-response, then the particular bacteria in question will be used in the substrate. This will promote the particular lectins and induce peptides that are suitable for its control. Under the circumstances that not all of the bacteria are destroyed by the insect's immune system, the ingestion of the insect plus the residual bacteria will provide a means for the induction of the auto-immune system of the recipient consumer.

Presentation of the bacterial- and/or viral-resistant insects would be:-

- 1 whole and live, or
- 2 inactivated whole, or
- 3 homogenised whole, or
- 4 sectional preparation, or
- 5 pupated whole live, or
- 6 pupated whole inactivated.

In the feeding of the insects as a food form it will be optimal to provide and present a food which does not need additional

antioxidants and preservatives, as this tends to defeat the philosophy behind the concept.

The extraction of specific anti-viral and anti-bacterial activity from the insects will necessitate chemical and physical extraction processes, involving the use of stabilisers, solvents, reactants and various separation techniques.

INSECT SOURCE

The immune response adaptability will be shown particularly amongst carrion and detritus feeders. The viability of the process is largely dependant on the ability to produce readily, large quantities and volumes of the insects of the species that are listed below. It is believed that flies, in their larval form, **maggots**, are the most suitable, as they have a short life span and high fecundity. Also, they have a natural inactivated inert phase - the pupa stage.

SPECIES

TRUE FLIES

Muscidae

I. House flies

common house fly	<i>Musca domestica</i>
common house fly	<i>Faffia Canicularis</i>
lesser house fly	
green cluster fly	<i>Dasyphora Cyanella</i>

II. Blow flies	Calliphoridae
blue bottle	Calliphora Erythrocephalia
	Calliphora Vomitoria
green bottle	Lucilia Sericata
	Lucilia Caesar
flesh fly	Sarcophaga Camaria
III. seaweed fly	Coelopidae
	Coelopa Fridida
IV. fruit flies	Drosophilia
V. crane flies	Tipulidae
VI. mosquitoes	Culicidae
	Andphelline
VII. soldier flies	Stratiomyidae
VIII. horseflies	Tabanidae
IX. robber flies	Asilidae
X. hover flies	Syrphidae
	Tephritidae
XI. louse flies	Hippoboscidae

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Tachinidae

XII. sewage flies	Diptera
2 cave crickets	Rhaphidophoridae
3 cockroaches	Dictyptera
4 earwigs	Dermaptera
5 ground beetles	Carabidae
burying beetles	Silphidae
rove beetles	Staphylinidae
scarabs and chafers	Scarabaeidae
click beetles	Elateridae
larder beetle	Dermestidae
church tard beetle	
6 centipedes	Chilopoda
millipedes	Diplopodia
7 harvestmen	Opillionis
8	Series Schizophora
9 moths and butterflies	Lepidoptera

Superfamily Hesperioidea

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Superfamily Papillonoidea
 Superfamily Micropterigoidea
 Superfamily Eriocranioidea
 Superfamily Hepialoidea
 Superfamily Nepticuloidea/Stigmelloidea
 Superfamily Incurvaroidea
 Superfamily Cossoidea
 Superfamily Zygaenoidea
 Superfamily Pterophoroidea
 Superfamily Pyraloidea
 Superfamily Tortricoidea
 Superfamily Sesiioidea
 Superfamily Tineoidea
 Superfamily Alucitoidea
 Superfamily Noctuoidea
 Superfamily Geometroidea
 Superfamily Sphingoidea
 Superfamily Bombycoidea

Caddis Flies

Order Trichoptera

Bees Wasps Ants:

Order Hymenoptera:

Superfamily Evanioidea
 Superfamily Ichneumonoidea
 Superfamily Cynipoidea
 Superfamily Chalcidoidea
 Superfamily Proctotrupeoidea

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Superfamily Ceraphronoidea

Superfamily Chrysidoidea

Superfamily Scholioidea

The Ants:

Superfamily

Formicoidea

The True Wasps:

Superfamily

Vespoidea

Superfamily

Pompiloidea

Superfamily

Sphecoidea

The Bees:

Superfamily

Apoidea

Snails: cochlea

Worms: lumbricus terrestris

Slugs

DISEASES THAT COULD BE INCORPORATED INTO THIS
PROCEDURE

Anthrax

Bacillus Antharis

Botulism

Clostridium Botulinum

Cholera

Vibrio Cholerae

Diphtheria

Coryne Bacterium Diphtheriae

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Food Poisoning	Staphylococcus Bacillus Cerens Clostridium Perfringens Salmonella Typhimurium
Gas Gangrene	Clostridium Perfringens Clostridium Novyi Clostridium Septicum
Gonorrhoea	Neisseria Gonorrhoea
Leprosy	Mycobacterium Leprae
Meningitis	Neisseria Meningitidis Haemophilus Influenzae Streptococcus Pneumoniae Listeria Monocytogenes
Bubonic Plague	Yersinia Pestis
Pneumonia	Streptococcus Pneumoniae Haemophilus Influenzae Klebsiella Pneumoniae Mycoplasma Pneumoniae
Q Fever	Coxiella Burneth
Scarlet Fever	Streptococcus Pyogenes
Syphilis	Treponema Pallidum
Tetanus	Clostridium Tetani
Trachoma	Chlamydia Trachomatis
Tuberculosis	Mycobacterium Tuberculosis Mycobacterium Bovis
Typhoid	Salmonella Typhi
Typhus	Rickettsia Prowazekii
Measles	

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German measles	Rubella
Chicken-pox	Varicella
Shingles	Herpes Zoster
Common Cold	Acute Coryza
Hepatitis	
Bee Virus	
Influenza	
Encephalitis	
Mumps	
Whooping Cough	Burdetella Pertussis
Small-pox	Variola
Rabies	Hydrophobia

BACTERIAL FAMILIES COVERED BY THE PROCEDURE

Escheria
Salmonella
Arizona Proteus Klebsiella Shicella
Pasteurellayersina Francisella
Bruella
Actinobacillus
Haemophilus Mora & Ella Bordatella
Spharophorus
Staphylococcus
Streptococcus
Pneumococcus
Corynebacterium
Erysipelothrix

Listeria

Bacillus

Clostridium

Mycobacterium

Actinomyces

Nocardia

Pseudomonas

Campylobacter

Leptospira

Borrelia Treponema Spirillum

Mycoplasma Achoeplasma

USES AND APPLICATIONS

USES

A. Immunological Transfer:

1) Transfer of bacterial and viral immunity through ingestion, digestion and assimilation of insects, including their larval forms,, in their whole form or processed to recipient.

2)Transfer of bacterial or viral immunity through inoculation of active extracts from the tissues of insects and their larvae to the recipient.

B. As Protein and Organic Recyclers

Substrates:-

1. Sewage Waste.

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2. Organic waste from abattoirs, meat processing plants (cattle, sheep, pigs, poultry and including diseased animals, fish and shellfish, e.g. crabs, mussels, whelks and scallops).
3. Vegetable waste, from the food industry and manufacturers including brewing.
4. Wood pulp waste.
5. Household waste.
6. Seaweed.

The invention thus provides a method of eliminating the need for landfill or incineration in that insects can be introduced into land containing waste materials so as to enrich the soil and provide a slow release of nitrogen compounds.

C Animal Nutrition

Provision through suitable substrates of:

- 1) Protein Source
- 2) Lysine, Methionine & Isolucene in particular, as well as other amino acids.
- 3) Vitamin Source:-
 - B₁ Anevrin
 - B₂ Riboflavin
 - B₃ Niacin
 - B₅
 - B₆
 - B₁₂
 - Folic acid
 - Pantothenic

Biotin

C

D

E

K

4) DMAE

5) Various Fatty Acids

Saturated but in particular unsaturated:-

RAC

Palmitoleic

Oleic

Linoleic

Arichidonic Acid

Nervonic Acid

Ximenyic

myomycin

Long Chain Fatty Acids

Omega 3 unsaturated Fatty Acids

With the correct choice of insects, it will be possible to reduce oxidised unsaturated fatty acids and thus eliminate unsuitable rancid flavoured fatty acids from the food chain, returning the fatty acids to their prior double bond unsaturated state.

The procedure will also enable 'fishy tastes' to be eliminated, when feeding insects fed on fish waste to chickens. An important application of the present invention is thus the feeding of insects to chickens to generate innate immunity in the chickens, with the

result that the eggs from the chickens are of improved quality. In addition, the innate immunity generated in the chickens can be transferred to the consumers of both the chickens and the eggs laid by the chickens.

Insects living in soil digest and assimilate plant protein including that which has been attacked by fungi. It is accordingly possible to feed the insects on specifically chosen plant protein to produce a desired innate immune response. In addition, the anti-bacterial agents in the slime of worms migrates to the skin of a worm for transfer to the soil, and hence may be absorbed by plant roots and, in this way, promote the health of the plants, providing a feedback mechanism between species members (plants) after one has succumbed to disease promoting a strengthening of the plant population (as with the animal kingdom).

The biological and digestion processes of the insect larvae will also degrade BSE proteins into their component amino acids.

The procedure will also provide a source of trace elements and minerals, including

Se Selenium, Fe Iron, Mn Manganese, I Iodine, Ca Calcium, S Sulphur, K Potassium, Na Sodium, P Phosphorus and Cu Copper

APPLICATIONS

- 1) Control of disease in man by boosting the innate immunity system and aiding the induction of the auto-immune system.

2) Control of disease in animals and fish. Thus, for poultry, protection can be obtained against avian infectious encephalomyelitis, avian listeriosis, avian plague, avian TB, avian bumblefoot, cage layer fatigue, coccidiosis, E coli, favus, fowl cholera, fowl paralysis, fowl typhoid, gapes, haemorrhagic disease, moniliasis, Newcastle disease, pullet disease, pullorum disease, salmonellosis, synovitis, toxic fat syndrome, gumboro, bronchitis, nephrosis, liver/kidney syndrome, Marek's disease and infestation with *trichostrongylus axei*. The invention is also applicable to the following swine diseases, i.e. dysentery, swine erysipela, African swine fever, swine influenza, swine plague, swine pox and SVD. For cattle, protection can be obtained against actinacillosis, actinomycosis, anthrax, foot and mouth disease, brucellosis, coccidiosis, pleuro-pneumonia, bovine encephalomyelitis, cattle plague, blouwildebeesoog, cerebrocortical necrosis, clostrial enteritis, Johne's disease, rabies, salmonellosis, skinTB, tick-borne fever, tuberculosis, viral enteritis, virus infections of cows' teats, vulvo-vaginitismastitis, polioencephalomalacia, parasitic gastroenteritis, milk fever, red water, hypocupraemia, hypomagnesaemic disease, infectious ophthalmic disease, part-parturient haemoglobinuria, mucormycosis, mucosaldis and pyelonephritis.

3) As a food base in chickens. When given whole to chickens in a free-range environment, it provides a mode of feeding which promotes foraging and scratching. This also promotes grass and

natural vegetation consumption, lessens aggressive behaviour, by satisfying basic pecking response, eliminating the need for beak cutting.

- 4) It can also serve as a growth promoter, a means of prevention of allergies and a means for preventing or inhibiting the development and growth of tumours.
- 5) As a food form, it enriches the eggs that are produced from chickens. With correct use of the substrate for insects, an egg can be produced which contains:
 - a) Omega 3 unsaturated fatty acids, but without the fatty taste, and.
 - b) Other biologically beneficial compounds. See Above.

It can also produce an egg of lower cholesterol levels, benefiting man, the consumer.

- 6) As a food source for game and fowl and pheasant, grouse and partridge, particularly in their early development.

Further Applications:

In the recycling of man-made fibres and carbon polymers.

In a marine environment, molluscs can be fed on decaying waste for the generation of an innate immune response in the molluscs, which innate immunity can then be transferred to fish and to those who feed on fish.

Claims:-

1. A method for the manufacture of a medicament for immunity generation and/or treatment and/or prevention of allergies, which method includes the use of insect tissues and/or larval forms and derivatives of insects.

2. A medicament for the provision of immunity to bacterial and viral disease and/or allergies and/or tumours, said medicament comprising insect tissues and/or larval forms and derivatives of insects.

3. A medicament as claimed in Claim 2, which is in a form which permits its ingestion, digestion and assimilation.

4. A medicament as claimed in Claim 2, which is in a form which permits its injection into the subject to which or whom the immunity is to be given.

5. A medicament as claimed in Claim 2, which is in a form which permits its absorption transcutaneously.

6. A method of recycling biological waste which includes the use of insects, including larval and other life forms, to produce either a medicament having immunity-generating properties or a food source which has immunity-generating properties.

7. A method as claimed in Claim 6, in which the biological waste is or includes sewage.

8. A method as claimed in Claim 6, in which the biological waste is or includes animal offal.

9. A method as claimed in Claim 6, in which the recycling of the biological waste material is effected on land which is enriched by the recycling process.

10. A method of producing a food source which includes the use of insects and their larvae which act as carriers providing immunity generation as well as protein, energy and biologically active beneficial materials.

11. A method of raising chickens, which includes feeding the chickens on the food source produced by the method of Claim 10.

12. A method of promoting the growth of plants in soil and increasing the resistance of the plants to fungal attack, which includes the addition of the end product of the method of Claim 6 to the soil.

Docket No.

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

IMMUNITY GENERATION

the specification of which

(check one)

☐ is attached hereto.

☒ was filed on 8 JUNE 2000 as United States Application No. or PCT International Application Number PCT/GB 00/02238 and was amended on _____

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Not Claimed

9913267.2

Gt. Britain

9 June 1999

(Number)

(Country)

(Day/Month/Year Filed)

☐

(Number)

(Country)

(Day/Month/Year Filed)

☐

(Number)

(Country)

(Day/Month/Year Filed)

☐

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

with full power of substitution and revocation:

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Registration No. 25,934

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Send Correspondence to: **Melvin I. Stoltz, Esq.**
51 Cherry Street
Milford, CT 06460

Direct Telephone Calls to: *(name and telephone number)*
Melvin I. Stoltz (203) 874-8183

Full name of sole or first inventor

CHRISTOPHER JEREMY LEONARD

Sole or first inventor's signature

Christopher J. Leonard

Date

25 NOV. 07.

Residence

GREAT BRITAIN

Citizenship

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ENB

Full name of second inventor, if any

Second inventor's signature

Date

Residence

Citizenship

Post Office Address